REMARKS

Present Status of Application

Claims 1-24 are pending. However, claims 3, 4, 6, 8-14, 17-19, and 22-24 presently withdrawn from consideration. Applicant has canceled claims 3 and 4. The remaining withdrawn claims, however, are dependent claims and should be allowed if the Examiner withdraws the rejections of the base independent claims.

Independent claims 5, 15, and 20 have been amended herein to more clearly identify a novel and non-obvious feature of the claimed invention. Specifically, claims 5, 15, and 20 have been amended to add the limitation "where a second reactant material reacts with both a first reactant material adsorbed onto the substrate and a residual portion of the first reactant material within the reaction chamber, thus forming a reacted material layer upon the substrate." Support for this amendment can be found in at least paragraph 26 of the specification. Accordingly, no new matter has been added to the application by this amendment.

102(e) rejections

Claims 1, 2, 5, 7, 15, 16, 20, and 21 stand rejected under 35 U.S.C. 102(e) as allegedly anticipated by Chen et al. 6,916,398 B2. This rejection is respectfully traversed.

Among other defining features, claim 1 recites "**where the second reactant gas reacts with both the first reactant gas adsorbed onto the substrate and the residual portion of the first reactant gas within the reaction chamber, thus forming a reacted material layer upon the substrate**". Similarly, amended claims 5, 15, and 20 also recite "**where a second reactant material reacts with both a first reactant material adsorbed onto the substrate and a residual portion of the first reactant material within the reaction chamber, thus forming a**

reacted material layer upon the substrate". According to paragraph 26 of the specification, a concentration of reactant gas remains in the reactor chamber even through purged. As the second gas reacts with the residual first gas within the deposition as well as the first gas adsorbed on the substrate, the deposition rate of atomic layer deposition is enhanced.

In contrast, Chen et al. teach delivering a first (second) reactant gas and a first (second) purge gas through a first (second) conduit (col. 2, lines 61-67). However, Chen et al. fail to teach or suggest the limitation "**the second reactant gas reacts with both the first reactant gas adsorbed onto the substrate and the residual portion of the first reactant gas**". To the contrary, Chen et al. expressly teach that "a pump evacuation alone between pulse of reactant gases may be used to **prevent mixing of the reactant gases**" (col.15, lines 18-20), and that "A time of about 1.0 second or less between pulses of the tantalum containing compound and the nitrogen containing compound is typically sufficient for the purge gas, **to prevent the pulses of the tantalum containing compound and the nitrogen containing compound from mixing together in the reaction zone.**" (col.15, lines 49-55). Accordingly, Chen et al. expressly teach away from the claimed embodiments by preventing the reactant gases from mixing together. In fact, one of ordinary skill in the art would not have even been motivated to leave a residual reactant gas in the chamber to reactant to react with a succeeding reactant gas. As such, claims 1, 5, 15, 20 clearly define over Chen et al.

A prior art reference must be considered in its entirety, i.e., as a whole, including portions that would lead away form the claimed invention. *W. L. Gore & Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540 220 USPQ 303 (Fed. Cir. 1983).

As the cited reference does not teach or suggest the features set forth in claims 1, 5, 15, 20, these claims are allowable over the cited reference. Insofar as all remaining claims depend

from claims 1, 5, 15, or 20, the remaining claims are also allowable at least by virtue of their dependency.

No fee is believed to be due in connection with this amendment and response. If, however, any fee is deemed to be payable, you are hereby authorized to charge any such fee to Deposit Account No. 20-0778.

Respectfully submitted,

By: _____

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